

## REMARKS

Applicants appreciate the thorough examination of the present application as evidenced by the Final Official Action of December 30, 2005 (hereinafter "the Action"). Applicants particularly appreciate the indication that Claims 9, 10, 30 and 31 contain allowable subject matter. Applicants have rewritten Claims 9, 10, 30 and 31 in independent form including the limitations of their base claims and any intervening claims. Accordingly, Applicants submit that Claims 9, 10, 30 and 31, as amended, are in condition for allowance.

Applicants have further amended Independent Claims 1 and 17 and cancelled Claims 2, 3, 19 and 22. Applicants respectfully submit that the remaining claims, as amended, are patentable over the cited references for at least the reasons explained below. Applicants further submit that the objections to the Specification and Drawing have been overcome, as explained below.

### 1. Objections to the Drawings

The Examiner objected to the drawings as failing to show (a) the plurality of spacers having a checkerboard pattern, (b) the thermal spacers aligned between adjacent unit cells, and (c) the plurality of thermal spacers being non-uniform in size.

With respect to objection (a), Applicants have submitted herewith a new sheet containing new Figure 6, which illustrates a plurality of spacers having a checkerboard pattern as described in the Specification at page 10, lines 13-22. The Specification at page 10, lines 13-22 has been amended to refer to new Figure 6 and include references thereto. As the structure of new Figure 6 was already described in the Specification at page 10, lines 13-22, Applicants respectfully submit that the inclusion of Figure 6 merely conforms the drawings to the specification as filed. Accordingly, Applicants respectfully submit that new Figure 6 does not constitute new matter, and respectfully request that new Figure 6 be entered in the present application.

With respect to objection (b), Applicants respectfully submit that Figure 2 as filed illustrates the thermal spacers aligned between adjacent unit cells. For example, Figure 2 illustrates four parallel unit cells, each defined by a gate contact 24. Each unit cell is divided into active regions by thermal spacers that are aligned from unit

cell to unit cell. Accordingly, Applicants respectfully request that objection (b) be withdrawn.

With respect to objection (c), Applicants note that Claim 22 has been cancelled. Since Claim 22 was the only claim which recited the plurality of thermal spacers being non-uniform in size, Applicants respectfully submit that objection (c) is moot and should be withdrawn.

The Examiner further objected to Figure 4 as containing an unlabeled feature above layer 30. Applicants have submitted herewith a Replacement Sheet for Figure 4 in which the unlabeled feature above layer 30 has been removed. The unlabeled feature above layer 30 is clearly a drafting error, so that its removal does not constitute new matter. Accordingly, Applicants respectfully submit that the objection to Figure 4 has been overcome.

In addition, Applicants have submitted herewith a Replacement Sheet for Figure 3. In the replacement sheet for Figure 3, the reference number "24" appearing on the leftmost airbridge connection has been changed to "20" to be consistent with the Specification, which notes at page 9, lines 24-25 that the source 20 and drain 22 connections are airbridged between mesas. No new matter has been added.

## 2. Objections to the Specification

The Official Action objected to page 9, line 22 of the specification as referring to "gate conductor 20." Applicants have amended page 9, line 22 of the specification to refer to "gate conductor 24" consistent with the remainder of the specification and drawings. Applicants have further amended the application at page 10, line 23 - page 11, line 3 as required by the Examiner. Accordingly, Applicants respectfully submit that the objections to the Specification have been overcome and respectfully request withdrawal of the same.

## 3. Claim Rejections

Claims 1-3, 8, 11-13, 16-18, 20, 21, 29, 32 and 33 stand rejected under 35 U.S.C. § 102(b) as anticipated by EP 0725445 ("Asano"). Applicants have amended Claim 1 to include the recitations of cancelled Claims 2 and 3. Accordingly, Claim 1, as amended, now recites (emphasis added):

1. (Currently amended) A high power, high frequency semiconductor device comprising:
  - a plurality of unit cells connected in parallel, the unit cells each having a controlling electrode and first and second controlled electrodes;
  - a first thermal spacer dividing at least one of the unit cells into a first active portion and a second active portion, spaced apart from the first portion by the first thermal spacer, the controlling electrode and the first and second controlled electrodes of the at least one unit cell extending across the first thermal spacer;
  - a second thermal spacer that divides the at least one unit cell into a third active portion, the third active portion being spaced apart from the first and second active portions and the controlling electrode and the first and second controlled electrodes of the at least one unit cell extending across the second thermal spacer; and
  - a third thermal spacer dividing an adjacent unit cell into a first active portion and a second active portion, the controlling electrode and the first and second controlled electrodes of the adjacent unit cell extend across the third thermal spacer and wherein the third thermal spacer is offset from the first and second thermal spacers along a direction parallel to the controlling electrode.

Applicants respectfully submit that Asano does not teach or suggest at least the underlined portions of Claim 1. In particular, Applicants respectfully submit that Asano does not teach or suggest a third thermal spacer dividing an adjacent unit cell into a first active portion and a second active portion, wherein the third thermal spacer is offset from the first and second thermal spacers. Applicants further submit that such limitations are not mere obvious design choices. Offsetting thermal spacers in adjacent cells as recited in Amended Claim 1 may result in the formation of a checkerboard pattern of thermal spacers. As explained in the present application, such a checkerboard pattern "may be beneficial in providing a more uniform thermal profile as active portions of adjacent fingers will be spaced apart from each other in two dimensions. The checkerboard pattern may also reduce the mutual coupling between air bridges." App., p. 10, ll. 19-22.

Thus, for at least these reasons, Applicants respectfully submit that Claim 1, as amended, is patentable over Asano, and request that the rejection of Claim 1, as amended, be withdrawn.

Similarly, Applicants have amended Claim 17 to include the recitations of cancelled Claim 19. Accordingly, Claim 17, as amended, now recites (emphasis added):

17. (Currently Amended) A high power, high frequency field effect transistor, comprising:  
a plurality of unit cells electrically connected in parallel, each unit cell having a source region and a drain region;  
a plurality of gate electrodes of the unit cells, the plurality of gate electrodes being electrically connected in parallel;  
a plurality of source electrodes of the unit cells, the plurality of source electrodes being electrically connected in parallel;  
a plurality of drain electrodes of the unit cells, the plurality of drain electrodes being electrically connected in parallel; and  
a plurality of thermal spacers that divide corresponding ones of the plurality of unit cells into at least a first active portion and a second active portion and wherein the gate electrodes, source electrodes and drain electrodes of the unit cells cross over the corresponding thermal spacers,  
wherein the plurality of thermal spacers are arranged in a checkerboard pattern.

Applicants respectfully submit that Asano does not teach or suggest at least the underlined portions of Claim 17. In particular, Applicants respectfully submit that Asano does not disclose or suggest a checkerboard pattern of thermal spacers. As explained above, such a pattern may be beneficial in providing a more uniform thermal profile, as active portions of adjacent fingers will be spaced apart from each other in two dimensions.

Thus, for at least these reasons, Applicants respectfully submit that Claim 17, as amended, is patentable over Asano, and request that the rejection of Claim 17, as amended, be withdrawn.

The dependent claims are patentable at least as per the patentability of the independent claims from which they depend.

In addition, upon the allowance of Claims 1 and 17, as amended, Applicants respectfully request rejoinder and consideration of previously withdrawn claims 4-7 and 25-28, which are patentable at least as per the patentability of the independent claims from which they depend.

### CONCLUSION

In light of the above amendments and remarks, Applicants respectfully submit that the above-entitled application is now in condition for allowance. Favorable reconsideration of this application, as amended, is respectfully requested. If, in the

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opinion of the Examiner, a telephonic conference would expedite the examination of this matter, the Examiner is invited to call the undersigned attorney at (919) 854-1400.

Respectfully submitted,

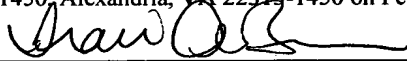


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